# PART I - ADMINISTRATIVE

## Section 1. General administrative information

**Title of project**

Restoration Of Riparian Habitat In Bakeoven / Deep Creeks

**BPA project number:** 9900600
**Contract renewal date (mm/yyyy):** 12/1999 ☐ **Multiple actions?**

**Business name of agency, institution or organization requesting funding**
Wasco County Soil and Water Conservation District

**Business acronym (if appropriate)** WCSWCD

**Proposal contact person or principal investigator:**


| | |
|---|---|
| **Name** | Ron Graves |
| **Mailing Address** | 2325 River Road, Suite 3 |
| **City, ST Zip** | The Dalles, OR 97058 |
| **Phone** | (541) 296-6178 |
| **Fax** | (541) 296-7868 |
| **Email address** | ron-graves@or.nacdnet.org |


**NPPC Program Measure Number(s) which this project addresses**
7.6A1, 7.6A2, 7.6B1, 7.6B3, 7.6B4, 7.6B5, 7.6B6, 7.6C5, 7.6D

**FWS/NMFS Biological Opinion Number(s) which this project addresses**

**Other planning document references**
Wy-Kan-Ush-Mi Wa-Kish-Wit Vol. II p.38 (CRITFC 1995) Objective 1 'protect and enhance aquatic and riparian habitat on all land bordering the Deschutes River and its tributaries to result in a net increase in habitat quantity and quality over time.' Objective 2. 'maintain or improve watershed conditions for sustained, long-term production of fisheries and high quality water.' Objective 3. 'maintain or improve flow for fish production in the tributaries of the Deschutes River.' Strategy 2. Support implementation of existing land and resource management plans. ACTION: Enhance natural production of summer steelhead in Bakeoven Creek.
Deschutes River Subbasin Plan (1990) Summer Steelhead Strategy 3
Bakeoven Watershed Preliminary Planning Document, Wasco County Soil and Water Conservation District, August 1994
Bakeoven Watershed Action Plan, Bakeoven Watershed Council, January 1996
Stream Report for Bakeoven Creek / Deep Creek, ODFW, September 1995

**Short description**
Implement riparian restoration plan developed during FY1999 planning. Initial efforts will emphasize riparian fencing, active revegetation, and off stream water developments. Initiate detailed monitoring at selected sites

**Target species**
Steelhead (Oncchyrhynus sp.), upland game animals and birds

## Section 2. Sorting and evaluation

**Subbasin**
Deschutes subbasin, Bakeoven Creek watershed

### *Evaluation Process Sort*

| CBFWA caucus | Special evaluation process | ISRP project type |
|---|---|---|
| Mark one or more caucus | If your project fits either of these processes, mark one or both | Mark one or more categories |
| ☒ Anadromous fish<br>☒ Resident fish<br>☒ Wildlife | ☐ Multi-year (milestone-based evaluation)<br>☒ Watershed project evaluation | ☒ Watershed councils/model watersheds<br>☒ Information dissemination<br>☐ Operation & maintenance<br>☐ New construction<br>☒ Research & monitoring<br>☒ Implementation & management<br>☐ Wildlife habitat acquisitions |

## Section 3. Relationships to other Bonneville projects

***Umbrella / sub-proposal relationships.*** List umbrella project first.

| Project # | Project title/description |
|---|---|
| | |
| | |
| | |
| | |

### *Other dependent or critically-related projects*

| Project # | Project title/description | Nature of relationship |
|---|---|---|
| 9900600 | Bakeoven Riparian Assessment | Detailed planning for restoration effort. Will be completed in FY1999 and is preparatory for effort proposed in FY2000. |
| | | |
| | | |
| | | |

## Section 4. Objectives, tasks and schedules

### *Past accomplishments*

| Year | Accomplishment | Met biological objectives? |
|---|---|---|
| 1994 | Preliminary watershed project planning | yes |
| 1996 | Watershed Action Plan Developed, Upland treatment began | yes |
| 1998 | Continuing upland treatments | no - in progress |
| 1999 | Riparian Assessment & Detailed Planning | no - in progress |

## *Objectives and tasks*

| Obj 1,2,3 | Objective | Task a,b,c | Task |
|---|---|---|---|
| 1 | Ensure overall project coordination maintains high level of agency and landowner participation, avoids overlaps and duplications of effort, identifies and resolves issues as they occur | a | Coordinate project activities with participating agencies |
| | | b | provide regular project updates via newsletter, personal contact, watershed council meetings, and special meetings as needed |
| | | c | Meet with landowners / landowner groups, obtain project agreements, provide planning assistance. |
| | | d | Coordinate Wasco Co. schools involvement in project for outdoor environmental education. |
| 2 | Implement riparian restoration plan | a | Develop grazing management plans with individual landowners with special emphasis on protection of riparian areas. |
| | | b | Develop off-stream water sources to to reduce pressure on riparian areas. |
| | | c | Support BPA NEPA process as necessary. |
| | | d | Construct riparian protection fencing |
| | | e | Actively revegetate riparian area in critical areas with native and locally adapted tree and shrub species. |
| | | f | Reseed disturbed areas with perennial grass seed. |
| 3 | Monitor changes to riparian and stream channel conditions, and water quality parameters | a | Install and recover elecronic temperature data loggers at designated sites. |
| | | b | Participate in annual spawning survey with ODFW. |
| | | c | Establish photopoints at each project site and designated stream reach. |
| | | d | Establish monitoring sites for other parameters according to monitoring plan to be finalized in 1999. |
| | | e | Conduct first year monitoring. |

## *Objective schedules and costs*

| Obj # | Start date mm/yyyy | End date mm/yyyy | Measureable biological objective(s) | Milestone | FY2000 Cost % |
|---|---|---|---|---|---|
| 1 | 12/1995 | cont. | Coordinate project efforts with agencies and watershed council | | 9.00% |
| 2 | 12/1999 | 9/2002 | Restore riparian vegetation, fish habitat, floodplain vegetation, proper functioning condition of riparian areas. | X | 79.00% |

| | | | | | |
|---|---|---|---|---|---|
| 3 | 03/1999 | 09/2007 | Document changes to riparian vegetation/habitat | | 12.00% |
| | | | | | |
| | | | | **Total** | 100.00% |

**Schedule constraints**
No schedule constraints are currently identified.
Major Milestones: September 2002 Complete upland conservation
September 2002 Complete riparian conservation

**Completion date**
FY 2002

# Section 5. Budget

**FY99 project budget (BPA obligated):** $35,065

## *FY2000 budget by line item*

| Item | Note | % of total | FY2000 |
|---|---|---|---|
| Personnel | | %38 | 30,000 |
| Fringe benefits | includes basic health, life, dental & employer costs (FICA, SUTA, Medicare, Workers comp, etc.) | %9 | 7,500 |
| Supplies, materials, non-expendable property | fencing material, monitoring equipment, office supplies & equipment | %4 | 3,000 |
| Operations & maintenance | | %0 | |
| Capital acquisitions or improvements (e.g. land, buildings, major equip.) | | %0 | |
| NEPA costs | | %0 | |
| Construction-related support | | %0 | |
| PIT tags | # of tags: | %0 | |
| Travel | Vehicle lease: $4873<br>Vehicle operations: 10,000 mi * $.30/mi | %10 | 7,863 |
| Indirect costs | overhead costs | %6 | 4,573 |
| Subcontractor | (implementation of objective 2) | %34 | 27,064 |
| Other | | %0 | |
| | | **TOTAL BPA FY2000 BUDGET REQUEST** | $80,000 |

## *Cost sharing*

| Organization | Item or service provided | % total project cost (incl. BPA) | Amount ($) |
|---|---|---|---|
| GWEB | Upland Funding | %27 | 35,000 |
| Wasco County | Budget support | %2 | 2,000 |
| WCSWCD | Technical assistance | %4 | 5,000 |
| NRCS | Technical assistance | %2 | 3,000 |
| Landowners | Implementation cost share | %5 | 6,000 |

| | |
|---|---|
| **Total project cost (including BPA portion)** | $131,000 |

### *Outyear costs*

| | FY2001 | FY02 | FY03 | FY04 |
|---|---|---|---|---|
| **Total budget** | $110,000 | $90,000 | $12,000 | $12,000 |

## Section 6. References

| Watershed? | Reference |
|---|---|
| ☐ | Wy-Kan-Ush-Mi Wa-Kish-Wit Vol. II p.38 (CRITFC 1995) Objectives 1, 2, and 3. Strategy 2. Action: Enhance natural production of summer steelhead in Bakeoven Creek. |
| ☒ | Bakeoven Watershed Preliminary Planning Document, Wasco County Soil and Water Conservation District, August 1994 |
| ☒ | Bakeoven Watershed Action Plan, Bakeoven Watershed Council, January 1996 |
| ☐ | Deschutes River Subbasin Plan (1990) Summer Steelhead Strategy |
| ☐ | Stream Report for Bakeoven Creek / Deep Creek, ODFW, September 1995 |
| ☐ | |

# PART II - NARRATIVE

## Section 7. Abstract

FY2000 PROPOSAL

Goals: Improve watershed health, improve water quality, restore degraded habitat in-stream and in the riparian corridor, increase natural steelhead production, benefit other species of wildlife.

Objectives: Implement riparian restoration plans with associated fencing, off-stream water developments, and plantings. Implement monitoring plan.

This project initiates riparian work as the second phase of a comprehensive watershed treatment approach. Land treatment, fencing, livestock water developments, and management systems in the uplands are being implemented now using other funding sources. It follows NWPPC policies and addresses many measures of the 1994 Fish and Wildlife Program.

This proposal will implement the first year of a three-year riparian restoration effort aimed at boosting natural steelhead production in Bakeoven Creek from less than 200 returning adults to 600 or more (based on conservative ODFW estimates of carrying capacity). The project will install riparian protection fencing and develop off-stream water sources for associated upland pastures. These systems will be used with grazing rotations designed to allow riparian recovery. Riparian vegetation will be actively planted in critical areas after fencing has been completed.

Results will be fully documented in accordance with the Monitoring Plan (based on EPA monitoring protocols) and reviewed.

## Section 8. Project description

**a. Technical and/or scientific background**

This project addresses goals and objectives of the 1994 Fish and Wildlife Program, the Columbia River Anadromous Fish Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes, and the Bakeoven Watershed Action Plan (Bakeoven Watershed Council January 1996) sponsored by the Wasco County Soil and Water Conservation District. Their relationship to this project's objectives is discussed below.

This proposal supports all stated objectives for the Fish and Wildlife Program's Deschutes River Subbasin Plan: a) maximize protection and enhancement of aquatic and riparian habitat on all land bordering the Deschutes River and its tributaries to result in a net increase in habitat quantity and quality over time; b) maintain or improve watershed conditions for the sustained long-term production of fisheries and improved water quality; c) maintain or improve flow for fish production in the tributaries of the Deschutes. (Vol. II p.38). It carries out strategy 2 for Bakeoven by initiating fish habitat improvement work. The Columbia River Anadromous Fish Plan also identifies enhancement of natural summer steelhead production in Bakeoven Creek as one of four important strategies for the Deschutes subbasin.

This project supports the 1994 Fish and Wildlife Program goals, policies and objectives as outlined below from Sections 7.6 A, B, and C. The habitat goal (7.6) is to "protect and improve habitat conditions to ensure compatibility with the biological needs..."
This project deals directly with resource management (human activities) systems affecting steelhead production in a coordinated, comprehensive approach to watershed management (7.6A.1). This project will begin implementation of riparian restoration plans which will improve productivity of steelhead habitat for the weak run in Bakeoven as well as protecting limited areas of currently good habitat (7.6A.2).

This project follows the habitat policies through locally led coordination and cooperation and strong private landowner involvement in this pro-active project (7.6B.1). Habitat elements of the project are integrated into a full-scale watershed improvement project in which cooperative agreements have been obtained with all participating landowners (7.6B.3). Habitat improvements will emphasize implementation of grazing management systems. These were identified during action plan development as a critical component for riparian restoration. This project makes extensive use of multiple funding sources including private landowner cost share and in-kind support, GWEB, USDA, Oregon Dept. of Agriculture, BLM, Oregon Trout, ODFW and others. It uses technical support and cooperation from OSU Extension, BLM, ODFW, Wasco Co. SWCD, The Confederated Tribes of the Warm Springs Reservation of Oregon, and NRCS (7.6B.5). The project emphasizes education, by involving the local school district. Regular newsletter updates are published. The Conservation District assisted in forming the local watershed council and developing the local assessment and action plan enabling local stakeholders, and particularly landowners, to take a pro-active role in helping solve their own resource problems (7.6B.6). The objectives of the Council are to adopt management practices consistent with regional habitat objectives. These systems place maximum emphasis on grazing management systems to allow revegetation of riparian areas and to restore proper functioning conditions (7.6C.5). Landowners agree to assume operations and maintenance costs for 10 years as part of their project agreement.

Habitat degradation in Bakeoven has been due primarily to land management practices, which over the course of 125 years has adversely affected watershed health. Land use in Bakeoven Watershed is almost entirely range. Past use of season-long grazing and large pasture size has led to degradation of perennial grass stands and riparian vegetation, affecting the hydrologic processes of the watershed and the stream. Increased flood flows and low summer baseflows, coupled with reduced bank stability due to inadequate riparian vegetation, account for much of the loss of habitat within the stream, as well as high water temperatures. For instance, frequency of rearing pools has been reduced as the stream has become wider and shallower due to high flood flows and unstable banks. These same causes are, at least in part, responsible for reduced steelhead populations.

Vegetative recovery will add stability and enable stream structure to reestablish itself through natural hydrologic processes with narrower, deeper channels and higher frequency of pools. The proposed work will contribute, along with other funding sources, toward passive and active riparian restoration and implementation of improved land and riparian management systems.

Significant work history on the project is outlined as follows: Initial project planning was completed in 1994 under an Oregon Department of Agriculture grant. Funding was obtained from Oregon Governor's Watershed Enhancement Board to commence upland work focused on grazing management systems and the tools to make them work, primarily fencing and upland water developments. 100% of the landowners in the Bakeoven watershed have participated in implementing improved grazing management systems in the uplands. Upland assessment and planning followed specifications of the Natural Resources Conservation Service. Bureau of Land Management personnel have been involved and have participated in assessment of operations which include BLM lands. BLM, Oregon Trout and ODFW have assisted in several fencing projects. Detailed riparian assessment will be completed in 1999 under a BPA grant. The project is entering its fourth year of a planned 5-year upland treatment effort and is ready to initiate an estimated 3.5-year effort on riparian restoration.

Wasco County SWCD District Manager Ron Graves has been involved as project manager/coordinator since the project began, and is also involved in the ongoing Buck Hollow Watershed Project, which is nearing completion. Similar work is underway in the neighboring Pine Hollow Watershed.

References:
Bakeoven Watershed Preliminary Planning Document (Wasco Co. SWCD August 1994)
Bakeoven Watershed Action Plan (Bakeoven Watershed Council January 1996)

**b. Rationale and significance to Regional Programs**

The proposed project will begin the riparian restoration phase of the watershed project, establish riparian fencing, plant critical areas and develop off-stream water sources for pastures isolated from the stream. Riparian buffers under the USDA Conservation Reserve Program will be promoted. Stream areas enrolled in this program will provide significant leveraging of BPA funds, and will be rested for 10 to 15 years. Other funding sources are being used for land treatment and upland range improvements.

This proposal should be viewed in the context of the rest of the comprehensive watershed plan. Improved management systems, along with appropriate tools (fencing and water developments), are being put into place to better manage upland range and cropland, reducing both runoff and erosion, and providing some protection to the stream corridor from damaging flood events. Upland assessment, planning and implementation followed specifications of the Natural Resources Conservation Service. This project will begin implementation of the second phase of the watershed project, which focuses on managing riparian areas to allow regrowth and maintenance of riparian vegetation. Detailed riparian assessment will be completed in 1999 under a BPA grant.

This project strongly supports the goals and objectives of the 1994 Fish and Wildlife Program and the Columbia River Anadromous Fish Plan helping restore a weak run of summer steelhead in a principle Deschutes tributary. Integrated into a holistic watershed project, this project will have benefits to many other species, including red-band trout, deer, elk, antelope and game birds. Because the project emphasizes passive restoration methods, i.e. land management changes to encourage vegetative recovery in uplands and riparian areas, no adverse effects are foreseen to the habitats of any species of fish or wildlife.

The SWCD requires landowners, through written agreements, to assume O&M responsibilities and associated costs as a condition of receiving cost share for conservation practices applied on their land.

**c. Relationships to other projects**

This project is consistent with the objectives of the Deschutes Subbasin Plan (1990) Summer Steelhead Strategy 3, and directly implements a proposed action of Wy-Kan-Ush-Mi Wa-Kish-Wit, Volume II, page 38, Strategy 2: "ACTION: Enhance natural production of summer steelhead in Bakeoven Creek." It also complements other Lower Deschutes fish habitat projects, such as Trout Creek and Buck Hollow. This project is the natural follow-up to the Bakeoven Riparian Assessment project #99-006-00 which is currently underway and which will provide the detailed plans for implementation and monitoring.

**d. Project history** (for ongoing projects)

Outreach efforts began in 1993, when a group of landowners from the Bakeoven watershed approached the SWCD to request assistance in improving their grazing management systems and protecting the creek. Technical partners from state and federal agencies were contacted, and a watershed council was organized. Preliminary planning was completed in 1995. The Bakeoven Watershed Action Plan was written, following the format developed by the Strategic Water Management Group (SWMG). Three years of a five-year upland treatment phase have now been completed using other funding sources. A FY1999 BPA grant is being used to complete detailed riparian assessment using ground-truthed low-level aerial photography and ODFW physical stream surveys. This proposal initiates a 3.5 year riparian restoration phase based on detailed restoration plans funded for development in FY99 with BPA funds ($35,065 + other funding).

**e. Proposal objectives**

Objectives are: 1. Coordinate project activities to avoid overlap and duplication, and to identify and resolve issues which may arise. 2. Implement detailed restoration plans including fencing, water developments, and tree planting. 3. Monitor water quality, riparian growth, project implementation and spawning activity.

Products resulting from this project will include 4.5 miles of riparian protection fencing, four off-stream water developments, associated grazing plans and monitoring data in accordance with the monitoring plan (using EPA monitoring protocols) currently under development.

**f. Methods**

Objective:

1. Project coordination to maintain landowner and agency participation, avoid overlap and duplication of effort, and to identify and resolve issues as they occur is a necessary component of any project. Tasks associated with this objective include regular interface with participating agencies, watershed council, and individual landowner participants. Other tasks include providing opportunities for local student involvement in natural resources. In addition to the coordination effort, one task under this objective includes providing public information on project activities.

2. Riparian restoration efforts will emphasize passive recovery of the riparian corridor and stream function. Riparian protection fencing, grazing management plans and off-stream water developments will protect the stream from inappropriate grazing practices, allowing full vegetative recovery. Stream function and water quality parameters will improve due to the stabilizing effect of woody vegetation, such as temperature. In critical areas, native and locally adapted trees and shrubs will be planted to speed vegetative regrowth.

Active manipulation of stream habitat was considered and de-emphasized for the following reasons: a) Structural approaches tend to be expensive and have a high risk of failure, b) inappropriate design of structures can negatively affect non-target species, and c) structures often have a limited life-span or require expensive long-term maintenance. On the other hand, passive restoration, i.e. changing those management practices which previously caused a negative effect on target and non-target species, will positively affect all species of fish and wildlife for a minimal cost with a high probability of success. In addition, project benefits will be felt over the long term (multiple generations), because local landowner/managers are involved in the process and incorporate the needs of fish and wildlife into their long-term management systems.

3. Monitoring will be in accordance with the monitoring plan, currently under development with FY99 funding. BLM and ODFW fish biologists and other technical personnel will be consulted during development of restoration and monitoring plans. The monitoring plan will follow EPA protocols and will include photopoints at project sites, stream cross-sections, continuous temperature monitoring, spawning surveys and other parameters as recommended by partner agencies and approved by Bonneville Power Administration. The SWCD technician will accomplish most of this work. Annual spawning surveys will be performed in cooperation with ODFW.

No risks to habitat, other organisms or people are readily apparent.

**g. Facilities and equipment**

Office space in the USDA Service Center in The Dalles will be used to support the project. Macintosh and Pentium computers are available as well as color printers and a plotter. Software includes ARCVIEW, ARCINFO and AutoCAD Light. Field equipment is available to support the project and includes water quality monitoring equipment, survey instruments, and an ATV. A four-wheel-drive pickup must be leased to provide access to the off-road locations in the project. At least four additional electronic temperature data loggers must be purchased.

No capital expenditures are planned.

**h. Budget**

Two positions will be partially funded by BPA funds. The District technician will spend 80% of his time on the Bakeoven project, and the District manager will spend 25% of his time on Bakeoven.
Under equipment, at least four electronic temperature data loggers will be purchased, as well as 4.5 miles of fencing material, and a minor quantity of office supplies.
Transportation to and from the project is an average of 60 miles each way from the office. As sites are in rugged, remote areas, a four-wheel drive vehicle must be leased. Mileage and upkeep of the vehicle is included in this budget.
Project implementation will be accomplished by contracting fence construction and off-stream water developments through competitive bids or by reimbursement of individual landowners that opt to complete work themselves.
Estimated overhead costs total 6% of the budget.

## Section 9. Key personnel

The Project Manager is Ron Graves. He is planned for 0.25 FTE in FY2000. Duties include overall project coordination and management. He serves as point of contact for participating landowners and agencies. Financial management aspects of the job include accounting for expenditures against authorized line items, obtaining other grants to assist in implementation, and developing cost breakdown spreadsheets to share costs for individual practices or systems of practices between authorized funding sources. He is designated as the District Contracting Officer and prepares all contract documentation and solicitations where contracts are required. He conducts site showings and bid openings in accordance with the contracting manual and procedures adopted by the District Contract Review Board. In addition he obtains landowner agreements for participation in the project. He prepares all project-related invoices and payments, which the District Board of Directors reviews monthly. He prepares and submits all required project reports and necessary permit applications. He plans and conducts project related meetings as required and supports local watershed council meetings. Mr. Graves prepares briefings on the project for different forums and regular newsletter articles. He provides daily supervision to the Project Technician and assists with fieldwork as needed.

Ryan Bessette is the project technician. He is planned for 0.80 FTE in FY2000. His responsibilities include serving as inspector during and on completion of practice implementation, obtaining and compiling monitoring information, including photo documentation. He records completed watershed work on appropriate maps. He works with the landowners and NRCS planners in developing grazing management plans and with NRCS technicians in laying out practices in the field. He prepares topographic maps and associated aerial photography for field use to assist in laying out portions of ranch plans. He obtains plant materials, cuttings and seed mixes for use in the project and assists in planting and seeding activities, including supervising planters.

# Resumes:

Ron Graves

Education: - BS Oceanography,
University of Washington 1977
- MS Meteorology and Oceanography,
Naval Postgraduate School Monterey 1982

Employer: Wasco County Soil and Water Conservation District
May 1990 to present

Duties: District Manager with responsibilities for all aspects of District Operations, Administration, Project Management

Recent Employment: United States Navy
1966-1977 Naval Communications Technician
1977-1990 Naval Surface Warfare Officer

Expertise: Extensive leadership and management experience in the U.S. Navy, with extensive planning experience. Extensive project management experience at Naval Weapons Center, China Lake as project manager for the NATO Anti-Air Warfare System where the Center was Missile Design Agent. Systems engineering was the watchword for that program, where direction was provided to 21 scientists and engineers at the Center and efforts of 5 foreign nations and 3 U.S. laboratories were coordinated.

Recent SWCD project completions include the first 5 of 8 Buck Hollow project phases. The most recent was Phase 5, completed in July 1998. A combined Oregon Dept. of Agriculture Planning and Implementation Grant and DEQ Water Quality (319) grant to implement best management practices to reduce erosion and runoff in the Fifteenmile Watershed was completed in June 1997. A bioengineering demonstration project on lower Fifteenmile Creek using multiple funding sources was completed in November 1997.

| | | |
|---|---|---|
| Ryan Bessette | Education: | - BS Rangeland Resources, Oregon State University with minor in Natural Resources, 1992 |
| | Employer: | Wasco County Soil and Water Conservation District November 1996 to present |
| | Duties: | District Technician, assigned full time to local Watershed Projects with responsibilities in planning, implementation, monitoring, compiling data |
| | Recent Employment: | United States Forest Service<br>4/93 - 11/96 Range Technician Mt. Hood NF<br>6/92 - 2/93 Range Technician Malheur NF<br>6/91 - 9/91 Range Technician Mt. Hood NF<br>Oregon State University<br>6/90 - 9/90 Research Assistant |

Expertise: Has a wealth of experience relating to range and riparian systems. Has conducted stream surveys for vegetative cover and stream bank stability. Surveyed mountain streams for fish habitat and livestock impacts. Conducted juniper debris loading operations on various streams. Coordinated several range projects on Mt. Hood NF and Columbia Gorge Scenic Area. Has worked on watershed analysis for White River and Environmental Assessments for grazing allotments. Supervised and managed cattle grazing activities and monitored vegetative conditions of grazing allotments. Has supervised Youth Conservation Corps and Youth Forest Camp crews in fence construction and provided oversight and inspector duties on fencing contracts and bioengineering contracts. Has supervised Americorps crews in riparian planting and grass seeding activity. Collected data on research plots of various seeded grasses. Has collected baseline and monitoring data on water quality, flows, and stream geomorphology. Has plant identification skills of forbs, grasses, and shrubs. Has supervised construction projects, including riparian fencing, and bioengineering.

## Section 10. Information/technology transfer

This is a combination planning and implementation project. Project information will be distributed in a regular, bimonthly newsletter, and at regular watershed council meetings. Presentations to various groups are used to convey information about the project and results. Publication of the detailed plans will be made available for agency and public review.

## Congratulations!

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